

6. *On Three New Species of Dicynodon.*—By R. BROOM, D.Sc., F.R.S.

(With 3 Text-figures.)

THE three species of *Dicynodon* which are herein described have all been discovered by me during the last ten years, and in the case of each I have hesitated to describe as new a form that might perhaps belong to a species already known. On most careful consideration I have now come to the conclusion that each is new.

Dicynodon milletti sp. nov.

This new species was discovered by me at Sekretaris Kraal, between Biesjespoort and Murraysburg. It consists of a very fine skull with a good many bones of the postcranial skeleton. For a time I thought it might be regarded as a variety of *Dicynodon andrewsi*, but as it is manifestly a new species I am naming it after Mr. W. Millett of Sydney-on-Vaal, who takes a keen interest in the Tertiary fossils of the Diamond Gravels.

The skull is moderately flat and broad. From the back of the squamosal to the front of the snout it measures 290 mm., and the greatest breadth across the squamosals is 268 mm.

The snout is short, and, although slightly flattened in the specimen by crushing, must have been originally shallow. From the front of the orbit to the front of the snout the measurement is 80 mm. The nostril is large, measuring 27 mm. by 16 mm. The septomaxillary is within the nostril and does not appear on the facial surface. Above the posterior border of the nostril, doubtless on the nasal bone, is a well-developed elongated boss. Behind this nasal boss and a little outside of it is a second smaller boss on the prefrontal protecting the anterior upper border of the orbit.

The frontal region is slightly concave. The interorbital measurement is 43 mm. The postorbital bar is slender and passes almost directly outwards on the same plane as the frontals and parietals. The postfrontal is a triangular bone situated above the upper posterior corner of the orbit. The relations of the bones in the region

of the pineal foramen will be best understood from the figures given. Although the parietals are broader than in most *Dicynodons*, they are narrower than in *Dicynodon andrewsi*, the species with which it has perhaps most affinity. Further, the interparietal does not extend backwards as in *D. andrewsi*.

Dicynodon milletti is doubtless from the upper part of the *Endo-*



FIG. 1.—Skull of *Dicynodon milletti*, Broom. About $\frac{1}{3}$ natural size.

thiodon zone. *Dicynodon andrewsi* is from the top of the *Endothiodon* zone, and *Dicynodon kolbei* is also probably from the same zone. In affinities, *D. milletti* is in most respects intermediate between *D. andrewsi* and *D. kolbei*.

Dicynodon vanderbyli sp. nov.

This new species is founded on a moderate-sized skull discovered near New Bethesda Road Station by me some years ago. About half a dozen good skulls were found, but I was inclined to regard them

as belonging to *Dicynodon platyceps*, Broom until recently. But having at present a fine skull of *D. platyceps* for comparison, I have been forced to the conclusion that the two forms are quite distinct. I am therefore naming this New Bethesda Road type after Mr. W. van der

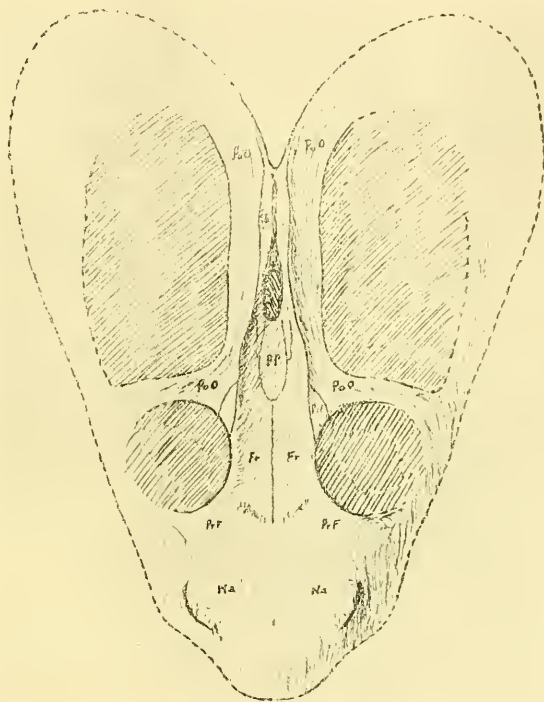


FIG. 2.—Skull of *Dicynodon vanderbyli*, Broom. About $\frac{1}{4}$ natural size

Byl of Abraham's Kraal, to whom South African palaeontology owes so much.

The type skull when complete measured probably from the back of the squamosal to the front of the snout about 320 mm. From the back of the pineal foramen to the front of the snout is 200 mm. The interorbital measurement is 45 mm.

The pre-orbital portion of the skull is short but unusually massive. There is a small boss over each nostril, and the supra-orbital margin in the prefrontal region is considerably raised and thickened. There are no tusks in the type nor in any of the other known skulls, though a young skull that probably belongs to the same species, and found

in association with the larger skulls, has a pair of small tusks. We may thus conclude that both sexes in the adult condition are tuskless as we find in *Dicynodon platyceps*.

Perhaps the most striking character of *Dicynodon vanderbyli* is the deep hollowing out of the preparietal region. All sections across the orbits show the orbital margins much everted and the frontal region irregularly concave, though slightly raised in the middle line. A section across the middle of the preparietal cuts on each side a very prominent ridge formed along the suture between the frontal and the postorbital, and the preparietal lies 10 mm. below the tops of the ridges.

The postfrontal is a small bone wedged in between the frontal and the postorbital. The postorbital is unusually large. It forms a very prominent outstanding postorbital margin, and on passing backwards forms the whole of the upper temporal margin. Between the two

postorbitals the parietals appear as if much crushed, and only a small part of each appears on the upper surface.

The horizon of *Dicynodon vanderbyli* is probably about the middle of the *Cistecephalus* zone.

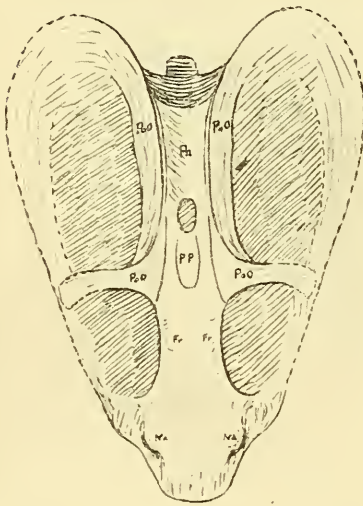


FIG. 3.—Skull of *Dicynodon wilmanae*, Broom. About $\frac{1}{2}$ natural size.

Dicynodon wilmanae sp. nov.

This new species is founded on a small skull discovered by me on the side of the high mountain about $2\frac{1}{2}$ miles east of Biesjespoort station and probably about 500 feet above the horizon of the station. As the station is as near as may be at the top of the *Endothiodon* zone, this new species may

be regarded as being situated about 500 feet up in the *Cistecephalus* zone.

The only *Dicynodon* which it resembles is *Dicynodon mustoi*, but as this latter is certainly from the middle of the *Endothiodon* zone, 1000 feet must separate the two allied forms.

As the form is clearly new, I have much pleasure in naming it after Miss M. Wilman, Curator of the Kimberley Museum, who for many years has taken an active part in stimulating research in South Africa.

The skull measures in greatest length about 140 mm., and in greatest breadth about 90 mm. From the front of the orbit to the front of the snout is only 30 mm.

The most striking characters of the species are the relatively very small size of the beak and the narrowness of the interorbital region. There are no tusks, and the caniniform processes are only 30 mm. apart. There is only a very slight thickening over the nostrils, and the nostrils are only 20 mm. apart.

The interorbital measurement is 19 mm. The whole frontal and preparietal regions are moderately flat. The sutures of the post-frontals are not apparent. The intertemporal region is moderately wide. The general relations of the bones will be best understood from the figure given.

The types of this and the other two species belong to the Kimberley Museum.